

REMARKS

This responds to the Final Office Action dated November 26, 2010. Claims 1, 8, 12, 13, 52, 62, 63, and 67 are amended, no claims are canceled, and no claims are added; as a result, claims 1-9, 11-13, 52, 53, and 62-70 are now pending in this application.

The Rejection of Claims Under § 103

Claims 1-4, 12 were rejected under 35 U.S.C. 103(a) as being unpatentable over Nishioka et al. (U.S. 5,489,548, hereinafter Nishioka) in view of Summerfelt et al. (U.S. 3,362,068 B1, hereinafter Summerfelt) in view of Fazan et al. (U.S. 5,392,189, hereinafter Fazan). Claims 5-7 were rejected under 35 U.S.C. 103(a) as being unpatentable over Nishioka ('548) in view of Summerfelt ('068) and Fazan ('189) as applied to claims 1-4 and 12 above, and further in view of Park et al. (U.S. 5,837,593, hereinafter Park). Applicant respectfully submits that the claims are distinguishable over the cited references for at least the following reasons.

The rejection states that, Nishioka discloses “a plurality of high-k dielectric layers (44) positioned between the support surface (42) and the conductive layer (46).” The rejection further states that Summerfelt discloses a second high-k dielectric layer including deposited components different from those in the first high-k dielectric layer. The rejection further states, without pointing to any specific section of Nishioka or Summerfelt, that the combination encompasses “wherein an interface between the support surface and the first high-k dielectric layer remains substantially free of a support surface oxide.” Summerfelt appears to be concerned with reducing leakage current, however, Applicant is unable to find in Summerfelt any reference to reducing oxidation. Applicant is also unable to find such a teaching in Nishioka or Fazan.

The Response to Arguments section of the present Office Action states that Park and Takehiro aim to prevent oxygen diffusion, Park appears to show a tantalum pentoxide film 42, however Park appears to teach annealing to overcome the technical difficulties cited. Takehiro appears to discuss reducing oxygen diffusion at column 7, lines 64-65, however Applicant respectfully submits that with the level of oxygen diffusion of Takehiro, a support surface oxide will still be present in Takehiro.

In contrast, independent claim 1 as amended, recites an un-annealed first high K dielectric layer, and a second high K dielectric layer including deposited components different from those in the first high K dielectric layer, wherein an interface between the support surface and the first high K dielectric layer remains substantially free of a support surface oxide present in the plurality of high-K dielectric layers. Further in contrast, claim 8 as amended, recites an un-annealed first high-K capacitor dielectric comprising tantalum pentoxide formed on a support surface, wherein an interface between the first high-K capacitor dielectric and the support surface is substantially free of a support surface oxide.

Because the cited references, either alone or in combination, do not show every element of Applicant's independent claims, a 35 USC §103(a) rejection is not supported by the references. Reconsideration and withdrawal of the rejection are respectfully requested with respect to Applicant's claims 1-7 and 12 for the reasons stated above, and for dependent claims, at least as depending on an allowable base claim.

Claims 8, 9, 11, 52, 53 and 67-70 were rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (U.S. 5,837,593, hereinafter Park) in view of Fazan et al. (U.S. 5,392,189, hereinafter Fazan). Claims 13 and 62-66 were rejected under 35 U.S.C. 103(a) as being unpatentable over Takehiro et al. (U.S. 6,403,441 B1, hereinafter Takehiro) in view of Fazan et al. (U.S. 5,392,189, hereinafter Fazan). Applicant respectfully submits that the claims are distinguishable over the cited references for at least the following reasons.

As discussed in the response above, Applicant is unable to find in Park, Fazan, or Takehiro any disclosure of a support surface or electrode that is substantially free of oxide at an interface as recited in the claims, as amended.

In contrast, claim 8 as amended recites an un-annealed first high-K capacitor dielectric comprising tantalum pentoxide formed on a support surface, wherein an interface between the first high-K capacitor dielectric and the support surface is substantially free of a support surface oxide. Independent claims 8, 12, 13, 52, 62, 63, and 67 recite similar claim language.

Because the cited references, either alone or in combination, do not show every element of Applicant's independent claims, a 35 USC §103(a) rejection is not supported by the references. Reconsideration and withdrawal of the rejection are respectfully requested with

respect to Applicant's independent claims 8, 12, 13, 52, 62, 63, and 67. Additionally, reconsideration and withdrawal of the rejection are respectfully requested with respect to the remaining claims that depend therefrom at least as depending on allowable base claims.

CONCLUSION

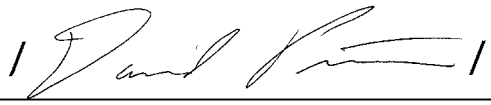
Applicants respectfully submit that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone the undersigned at (612) 373-6944 to facilitate prosecution of this application.

If necessary, please charge any additional fees or deficiencies, or credit any overpayments to Deposit Account No. 19-0743.

Respectfully submitted,

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By 
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